REMARKS

Reconsideration of the application in view of the above amendments and following remarks is respectfully requested.

Claims 1, 3-10 and 12-18 are pending. Claim 1 is amended to enhance the clarity of the claimed subject matter. Claims 4 and 13 have been amended to replace "acyl" with "acyl containing group". Support for the language is found, for example, in claim 1. Claim 4 depends directly from claim 1. Claim 10 (from which claim 13 depends) references claim 1. Claims 9 and 18 are amended to delete a compound that is no longer encompassed by claim 1 as amended. No new matter has been added by the amendments to the claims. Therefore, claims 1, 3-10 and 12-18 as amended herein are now pending in the subject application.

In the Office Action dated December 15, 2006, claims 4 and 13 were rejected under 35 U.S.C. § 112, second paragraph, as indefinite. This rejection is respectfully traversed.

Claims 4 and 13 are objected to based on the use of the term "acyl" (in the definitions of R^4 or R^5). The term "acyl" is believed to be not consistent with the term "acyl containing group" recited in claim 1. Accordingly, the term "acyl" group has been replaced in dependent claims 4 and 13 with "acyl containing group" for consistency with independent claim 1.

It is believed that the rejection of claims 4 and 13 under 35 U.S.C. § 112, second paragraph, has been overcome. Reconsideration and withdrawal of this rejection are respectfully requested.

In the Office Action, claims 1-3, 5-10, 12 and 14-18 were rejected under 35 U.S.C. § 103 (a) as unpatentable over Hitchings et al. (U.S. Patent No. 2,691,655). This rejection is respectfully traversed. It is noted that claim 2 is cancelled.

As a preliminary matter, Assignee's representatives apologize for the inconsistency between certain of the arguments previously submitted and claim 1 as previously submitted. When claim 1 was previously amended to separate the definitions of R^1 and R^2, hydrogen (H) was intended to be deleted from <u>both</u> R^1 and R^2. Unfortunately, due to typographical error, H was not deleted from the definition of R^1 in claim 1. As set forth above, claim 1 has now been amended to delete H from the definition of R^1.

Amended claim 1 recites substituents for R^1 and R^2 that do not include H at either. Thus, the compounds of amended claim 1 must possess a substituent other than H at both R^1 and R^2. Hitchings et al. does not teach compounds in which R^1 and R^2 are both other than H.

Hitchings et al. does include compounds wherein both R^1 and R^2 are H. Amended claim 1 (and thus claims 3, 5-10 and 14-18 which refer directly or indirectly to claim 1) of the subject application includes compounds wherein both R^1 and R^2 are alkyl. For example, both R^1 and R^2 may be methyl (CH_3). At page 4 of the Office Action, it is stated that "it is well established that compounds that differ by having a CH_3 group in place of hydrogen are structural analogs or homologs" and that there would have been motivation to prepare Applicants' claimed compounds "because such structurally homologous compounds are expected to possess similar properties."

Applicants respectfully disagree that the replacement of a hydrogen by a methyl group at both R^1 and R^2 yields a compound "expected to possess similar properties." As quoted above, the Office Action states that compounds that differ by having a CH_3 group in place of hydrogen are structural analogs or homologs, and that this is well established. However, no citation was provided in the Office Action to support the statement. Applicants note that MPEP 2144.09 (at 2100-155) states in part: "homologs (compounds differing regularly by the successive addition of the same chemical group, e.g., by $-CH_2-$ groups)". (However, even a difference in the number of $-CH_2-$ groups may not be sufficient, as noted in the next paragraph at 2100-155 of MPEP 2114.09 where it is stated that "prior art disclosure of C_8 to C_{12} alkyl sulfates was not sufficient to render *prima facie* obvious claimed C_1 alkyl sulfate".) In the present situation, it is not a difference in the number of the same chemical group, but rather between different chemical groups (H versus CH_3). A methyl group is significantly different than a hydrogen, including larger in the amount of space it occupies. The differences can affect in a variety of ways the interaction between a compound and its biological receptor, and thus result in different (rather than similar) biological properties.

The results of the biological assay of the subject application (as set forth in Table 1 therein) provide evidence of how the replacement of a methyl group for a hydrogen results in non-similar biological properties. Compound 106 and compound 73 of Table 1 (pages 126 and 123, respectively, of the subject application) differ only by R^1 and R^2, which are both H in compound 106 and both CH_3 in compound 73. Based on the statements of the Office Action as quoted above, since compounds 106 and 73 differ only by whether both R^1 and R^2 are H or CH_3, the two compounds would be "expected to possess similar properties." However, contrary to that asserted expectation, compounds 106 and 73 exhibit significantly different biological activities. As shown in Table 1 at pages 123 and 126, the IC_{50} for compound 73 is 0.16 whereas the IC_{50} for compound 106 exceeds 1 (1.1). Based on the IC_{50} values for compounds 73 and 106, the replacement of H by CH_3 group at R^1 and R^2 does not result in a compound possessing similar properties. The binding affinity of compound 106 is significantly lower than that for compound 73. Therefore, based on the assay results for compound 106 which has H at both R^1 and R^2, if one expected the replacement of both H with CH_3 group to yield similar properties, then an expectation of similar properties should have resulted in compound 73 having an IC_{50} similar to that for compound 106. Contrary to that expectation, however, the assay results unexpectedly showed that compound 73 has a significantly improved IC_{50}.

Accordingly, the claimed compounds that differ by having a CH_3 group in place of H at R^1 and R^2 are not structural analogs or homologs, and do not possess similar properties. Therefore, the claimed compounds are not *prima facie* obvious in view of the prior art compounds.

Applicants respectfully submit that the Patent Office has failed to establish a *prima facie* case for obviousness. Therefore, it is believed that the rejection of claims 1, 2, 5-10, 12 and 14-18 under 35 U.S.C. § 103(a) over Hitchings et al. has been overcome. Reconsideration and withdrawal of this rejection are respectfully requested.

In the Office Action, claims 1-3, 5-7, 10, 12 and 14-16 were rejected under 35 U.S.C. § 103 (a) as unpatentable over Chaudhari et al. (PCT Application Publication No. WO 02/36586). This rejection is respectfully traversed. It is noted that claim 2 is cancelled.

Amended claim 1 recites substituents for R^1 and R^2 that do not include H at either. Thus, the compounds of amended claim 1 must possess a substituent other than H at both R^1 and R^2. Chaudhari et al. does not teach compounds in which R^1 and R^2 are both other than H.

Chaudhari et al. does include compounds where both R^1 and R^2 are H. Amended claim 1 (and thus claims 3, 5-7, 10, 12 and 14-16 which refer directly or indirectly to claim 1) of the subject application includes compounds wherein both R^1 and R^2 are alkyl. For example, both R^1 and R^2 may be methyl (CH_3). At page 5 of the Office Action, it is stated that "it is well established that compounds that differ by having a CH_3 group in place of hydrogen are structural analogs or homologs" and that there would have been motivation to prepare Applicants' claimed compounds "because such structurally homologous compounds are expected to possess similar properties."

Applicants respectfully disagree that the replacement of a hydrogen by a methyl group at both R^1 and R^2 yields a compound "expected to possess similar properties." As quoted above, the Office Action states that compounds that differ by having a CH_3 group in place of hydrogen are structural analogs or homologs, and that this is well established. However, no citation was provided in the Office Action to support the statement. Applicants note that MPEP 2144.09 (at 2100-155) states in part: "homologs (compounds differing regularly by the successive addition of the same chemical group, e.g., by $-CH_2-$ groups)". (However, even a difference in the number of $-CH_2-$ groups may not be sufficient, as noted in the next paragraph at 2100-155 of MPEP 2114.09 where it is stated that "prior art disclosure of C_8 to C_{12} alkyl sulfate was not sufficient to render *prima facie* obvious claimed C_1 alkyl sulfate".) In the present situation, it is not a difference in the number of the same chemical group, but rather between chemical groups (H versus CH_3). A methyl group is significantly different than a hydrogen, including larger in the amount of space it occupies. The differences can affect in a variety of ways the interaction between a compound and its biological receptor, and thus result in different (rather than similar) biological properties.

The results of the biological assay of the subject application (as set forth in Table 1 therein) provide evidence of how the replacement of a methyl group for a hydrogen results in non-similar biological properties. Compound 106 and compound 73 of Table 1 (pages 126 and 123, respectively, of the subject application) differ only by R^1 and R^2, which are both H in compound 106 and both CH_3 in compound 73. Based on the statements of the Office Action as quoted above, since compounds 106 and 73 differ only by whether both R^1 and R^2 are H or CH_3, the two compounds would be "expected to possess similar properties." However, contrary to that asserted expectation, compounds 106 and 73 exhibit significantly different biological activities. As shown in Table 1 at pages 123 and 126, the IC_{50} for compound 73 is 0.16 whereas the IC_{50} for compound 106 exceeds 1 (1.1). Based on the IC_{50} values for compounds 73 and 106, the replacement of H by CH_3 group at R^1 and R^2 does not result in a compound possessing similar properties. The binding affinity of compound 106 is significantly lower than that for compound 73. Therefore, based on the assay results for compound 106 which has H at both R^1 and R^2, if one expected the replacement of both H with CH_3 group to yield similar properties, then an expectation of similar properties should have resulted in compound 73 having an IC_{50} similar to that for compound 106. Contrary to that expectation, however, the assay results unexpectedly showed that compound 73 has a significantly improved IC_{50}.

Accordingly, the claimed compounds that differ by having a CH_3 group in place of H at R^1 and R^2 are not structural analogs or homologs, and do not possess similar properties. Therefore, the claimed compounds are not *prima facie* obvious in view of the prior art compounds.

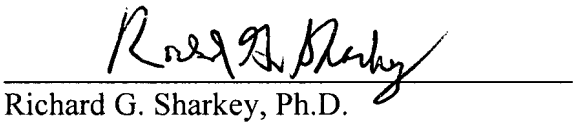
Applicants respectfully submit that the Patent Office has failed to establish a *prima facie* case for obviousness. Therefore, it is believed that the rejection of claims 1, 2, 5-7, 10, 12 and 14-16 under 35 U.S.C. § 103(a) over Chaudhari et al. has been overcome. Reconsideration and withdrawal of this rejection are respectfully requested.

Therefore, in light of the amendments and remarks set forth above, Applicants believe that all the Examiner's rejections have been overcome. Reconsideration and allowance of the pending claims (1, 3-10 and 12-18) are respectfully requested. If there is any further matter requiring attention prior to allowance of the subject application, the Examiner is respectfully requested to contact the undersigned attorney (at 206-622-4900) to resolve the matter.

The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

Respectfully submitted,

SEED Intellectual Property Law Group PLLC



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Enclosures:
Extension of Time Request (+copy)
Request for Continued Examination (RCE)